Agenda

February 25-26, 2002

Turbine Power Systems Conference

MONDAY, February 25

9:00 am - 3:30 pm REGISTRATION

1:00 pm **Welcome and Opening Remarks** – U.S. Department of Energy

1:15 pm **Overview on High Efficiency Engines and Turbines (HEET) Technology Roadmaps and Future Direction** – Abbie Layne, U.S. Department of Energy, National Energy Technology Laboratory

1:35 pm **Technology Development Needs for Coal-Fired Power Systems** – Ben Yamagada, Coal Utilization Research Council (CURC)

SESSION I – Industrial Turbine Systems-Technology Development and Market Assessment –
Chair: Chuck Alsup, U.S. Department of Energy, National Energy Technology Laboratory

Presentations during this session will cover projects on power generation market forecasts, smart sensors, technologies for zero emissions-fuel flexible combustion systems, ultra-high efficiency turbine designs, high temperature materials, simulation and prediction tools, and novel power generation concepts derived from rocket and ramjet engines.

2:00 pm **DOE Office of Power Technologies DER Overview** – Steve Waslo, U.S. Department of Energy, Chicago Operations Office

2:20 pm **Technologies for Next Generation Turbine Systems** – Kenneth Yackly and Daniel P. Smith, General Electric Company

2:40 pm **Siemens Westinghouse Power Generation Next Generation Technology Programs** – Ben Wiant, Siemens Westinghouse Power Corporation

3:00 pm **Technologies for Next Generation Turbine Systems** – Bill Day, Pratt and Whitney

3:20 pm BREAK

3:35 pm **Technologies for Next Generation Turbine Systems** – Alfonse Wei, Rolls Royce

3:55 pm **Fabrication and Testing of an Advanced Nonpolluting Turbine Drive Gas Generator** – Keith Pronske, Clean Energy Systems

4:15 pm **Development and Testing of a Pre-Prototype Mach 2 Ramgen Engine** – Ken Fonnesbeck, Ramgen Power Systems

4:35 pm **Laser Stabilization for Near-Zero NO_X Gas Turbine Combustion Systems** – Vivek Khanna, Solar Turbines

4:55 pm **LES Software for Design of Low Emission Combustion Systems** – Cliff Smith, CFD Research Corporation

5:15 pm **Cascaded Humidified Advanced Turbine Systems** – Ron Wolk, Wolk Integrated Technologies

5:35 pm **Engine Health Management for the Navy and Air Force** – Zane Gastineau, U.S. Air Force

6:30 - 8:00 pm DINNER WITH SPEAKER

TUESDAY, February 26

7:00 am REGISTRATION AND CONTINENTAL BREAKFAST

SESSION II – Turbine / Fuel Cell Hybrid Power Systems–Technology Development and Market Assessments – Chair: Rich Dennis, U.S. Department of Energy, National Energy Technology Laboratory

Presentations during this session will cover projects on power generation market forecasts for hybrid power systems, development and testing of critical components, turbine and balance of plant integration issues, system studies for large hybrid power modules, and status of small- scale demonstrations.

8:00 am **Solid Oxide Fuel Cell Hybrid System for Distributed Power Generation** – Nguyen Minh, General Electric / Honeywell

8:25 am **Critical Components for Direct Fuel Cell / Turbine Ultra-Efficiency System** – Hossein Ghezel-Ayagh, Fuel Cell Energy

8:50 am **Small Turbogenerator Technology for Distributed Generation** – Robert R. Moritz, Rolls Royce

9:15 am **Demonstration Status and Turbine Issues** – James Ciesar, Siemens Westinghouse Power Corporation

9:40 am BREAK

SESSION III – Cross-cutting Research – Chair: Tom George, U.S. Department of Energy, National Energy Technology Laboratory

Presentations during this session will cover supporting research projects to develop High Efficiency Turbines and Engines. Topics will include advanced-high temperature materials and coatings, combustion and aftertreatment concepts, simulation tools, aerodynamics/aeromechanics, heat transfer, sensors, and monitoring technologies.

10:15 am **Welding and Weld Repair of Single-Crystal Gas Turbine Alloys** – John Vitek, U.S. Department of Energy, Oak Ridge National Laboratory

10:35 am **Development of NDE Technology for Environmental Barrier Coating and Residual Life Estimation** – Bill Ellingson, U.S. Department of Energy, Argonne National Laboratory

10:55 am **Development of a New Approach for the Evaluation of Mechanical Reliability of Ceramic Gas Turbine Components** – J.P. Singh, U.S. Department of Energy, Argonne National Laboratory

11:15 am **New Methods Characterize and Control Turbine Combustors** –
Geo Richards, U.S. Department of Energy, National Energy Technology Laboratory

11:35 am **HEET University / Industry Consortium** – Richard Wenglarz, South Carolina Institute for Energy Studies

12:00 pm GROUP LUNCH

SESSION IV – Condition Monitoring Presentations – Chair: Meherwan P. Boyce, The Boyce Consultancy

1:30 pm **State of the Art of Condition Monitoring** – Meherwan P. Boyce, The Boyce Consultancy

2:00 pm **The Power Industry Vision for Predictive Maintenance** – Rich Colsher, EPRI

3:00 pm **Pipeline Compression Stations and Small Gas Turbines** – Anthony J. Smalley, SWRI

3:30 pm BREAK

4:00 pm **Diagnostics for Aerospace Propulsion Systems** – Sanjay Garg, NASA

4:30 pm **EPRI–Monitoring, Inspection, Modeling, and Condition Assessment of Gas Turbines** – Leonard Angello, EPRI

5:00 pm **Future Role of Condition Monitoring in Reliability and Availability** – Richard B. Jones, Consultant

5:30 pm **Condition Monitoring and Its Effect on the Insurance of New Advanced Gas Turbines** – John Latcovich, The Hartford Steam Boiler Inspection and Insurance Corporation

6:30 - 8:00 pm RECEPTION and HEET University / Industry Consortium Poster Session